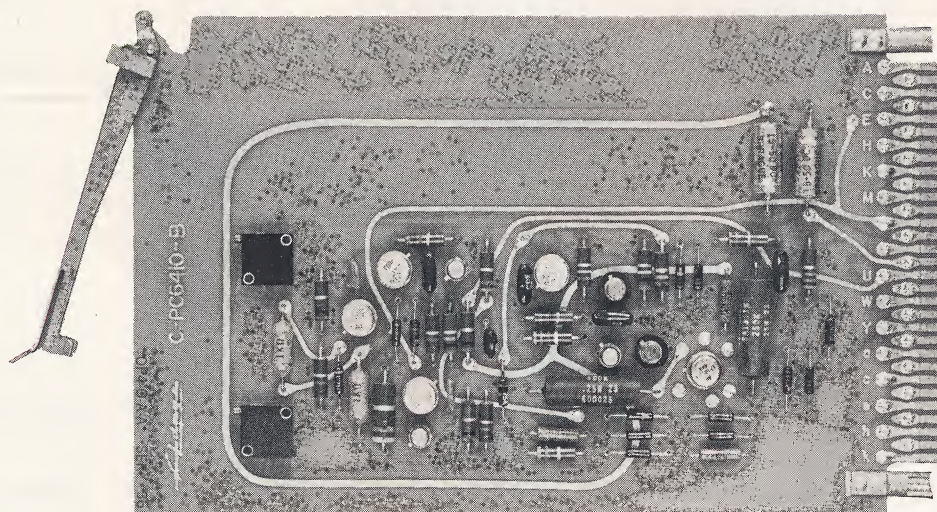


ADAGE, INC.
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Boston, Massachusetts 02215
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OPERATIONAL AMPLIFIER



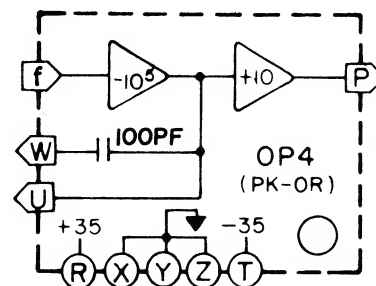
model OP4

The Operational Amplifier, Model OP4, is a high-gain, low-drift, precision amplifier designed to perform a variety of general purpose operations such as summation, integration, and multiplication by a constant. The unit is also used to provide a voltage output when used in conjunction with a digital-to-analog converter, a multiplexer, or a differential amplifier. Recovery from overload is very rapid.

The OP4 is assembled on a standard Adage, Inc. 5" x 8" Epoxy fibreglas plug-in etched circuit card and can be incorporated in any Adage system. It embodies the same conservative, all-solid-state design that characterizes the Adage line of analog/digital data processing and measuring equipment.

FUNCTIONAL DESCRIPTION

The OP4 consists of a wideband d-c amplifier with a gain of 1,000,000. Input signals to the amplifier are applied directly to the error point through external input and feedback impedances. The amplifier is a three-terminal device, having an input terminal, output terminal, and a common ground terminal. Power inputs of plus and minus 35 volts are referenced to the equipment's common ground termination. The amplifier output is unconditionally short circuit proof.



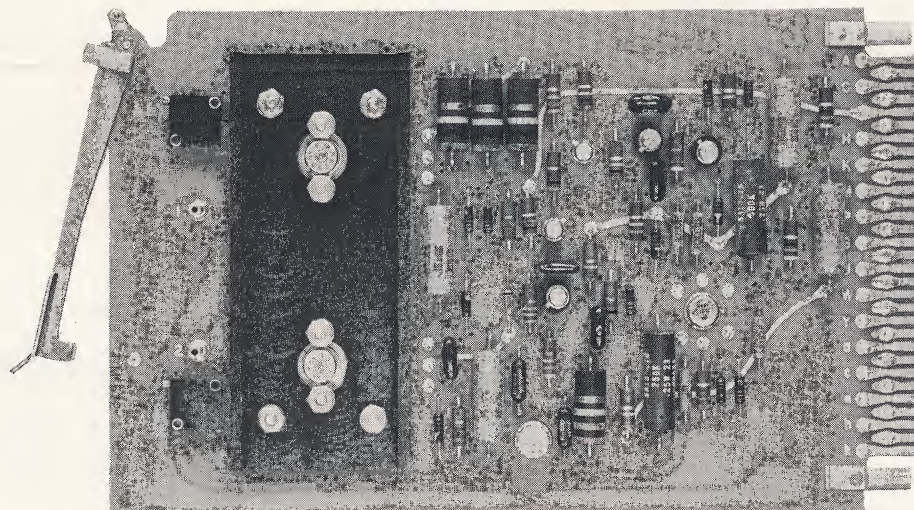
block diagram

SPECIFICATIONS

total gain	:	-10^6
output voltage	:	± 20 volts
output current	:	± 10 milliamperes
settling time	:	5 microseconds
overload recovery to .01% from 10 milliamperes overload	:	100 microseconds
slewing rate (output de/dt)	:	10^8 volts/second
input impedance	:	200K
leakage current at 25°C	:	adjustable to 0
temperature coefficient	:	10^{-9} amps/°C
offset drift at 25°C	:	± 100 microvolts
temperature coefficient	:	± 15 microvolts/°C
supply voltage	:	+35 and -35 volts
maximum capacitive load	:	2000 pf

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OPERATIONAL AMPLIFIER



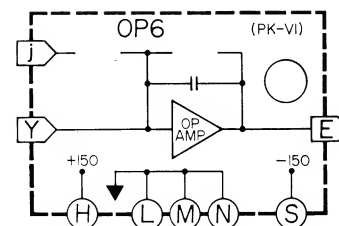
model OP6

The Operational Amplifier, Model OP6, is a high-gain, direct-coupled general purpose precision amplifier designed to perform a variety of general purpose operations such as summation, integration, and multiplication by a constant. The unit is also used to provide a voltage output when used in conjunction with a digital-to-analog converter, a multiplexer, or a differential amplifier.

The OP6 is assembled on a standard Adage, Inc. 5" x 8" Epoxy fiberglass plug-in etched circuit card and can be incorporated in any Adage system. It embodies the same conservative, all-solid-state design that characterizes the Adage line of analog/digital data processing and measuring equipment.

FUNCTIONAL DESCRIPTION

The OP6 consists of a wideband d-c amplifier with a gain of 1,000,000. Input signals to the amplifier are applied directly to the error point through external input and feedback impedances. The amplifier is a three-terminal device, having an input terminal, output terminal, and a common ground terminal. Power inputs of plus and minus 150 volts are referenced to the equipment's common ground termination. The amplifier output is unconditionally short circuit proof.



block diagram

SPECIFICATIONS

total gain	:	-10^6
output voltage	:	± 128 volts
output current	:	± 10 milliamperes
settling time	:	50 microseconds
overload recovery to .01% from 10 milliamperes overload	:	100 microseconds
slewing rate (output de/dt)	:	10^7 volts/second
input impedance	:	200K
leakage current at 25°C	:	adjustable to 0
temperature coefficient	:	10^{-9} amps/°C
offset drift at 25°C	:	adjustable to 0
temperature coefficient	:	± 15 microvolts/°C
supply voltage	:	+150 and -150 volts